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ABSTRACT

Samples of government publications, legal documents, newspapers, paperback novels, and instruction manuals were among the items used in a study to determine the degree to which the readability levels of materials used by adults reflect an awareness of and adjustment to the average reading ability of the adult population. The readability levels of the items selected were determined using the Fry Readability Graph. When compared to the average reading ability of adults, it was found that materials in the leisure reading and news media categories showed definite consideration of readership ability. However, the data also indicated that in the areas of political, legal, and consumer economics materials, the readability levels of the sampled items far surpassed the average adult's level of reading skills. (Author/FL)

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# A COMPARISON OF THE READABILITY OF MATERIALS COMMONLY USED BY ADULTS WITH THE AVERAGE ADULT READING LEVEL IN THE UNITED STATES

BY
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## ABSTRACT

This study investigated the degree to which the readability levels of materials commonly used by adults reflect an awareness of and adjustment to the average reading ability of the adult population. The readability levels of the items selected were determined using the Fry Readability Graph. When compared to the average reading ability of adults it was found that materials in the leisure reading and news media categories showed definite consideration of readership ability. However, the data also indicated that in the areas of political/legal and consumer/economics, the readability levels of the sampled materials far surpassed the average adult's level of reading skills.

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"I can think. What I can think, I can say. What I can say, I can write. What I can write, I can read. A reader can then know my thoughts."
(Harris and Smith, 1972)

Harris and Smith (1972), in their simplistic description, identify the crux of reading. It is a process of receiving communication of another's ideas using language symbols as intermediaries.

This is a two-fold process. The idea to be communicated must be encoded into appropriate symbols and the reader must be able to decode the symbols and sense the idea which was intended. Bormuth (1973-4) recognized the ability to communicate in this manner as one of man's most valued skills. Man has been able to record what he knows, add to the body of knowledge as he learns, and pass on this ever-expanding stockpile of ideas from generation to generation.

## Concerns for Literacy

As writing and reading replaced the oral tradition a new question was raised, that of literacy. Bormuth (1973-4) suggests that literacy in its broadest terms may be defined as being able to respond appropriately to written language. The Right to Read Advisory Council in 1973 adopted the following definition: "A literate person is one who has acquired the essential knowledge and skills in reading, writing and computation required for effective functioning in society, and whose attainment of such skills makes it possible for him to develop new aptitudes and to participate actively

in the life of the times."

After two years of research on adult functional literacy Northcutt (1974) stated that, "Literacy is best defined as the application of a set of skills to a set of general knowledge areas which result from cultural requirements that are imposed on members of a culture." He found literacy to be a construct which is meaningful only in a specific cultural context. Therefore, a person who is "literate" in one culture may be "illiterate" in another. Furthermore, as technology changes, the requirements for literacy change. Northcutt (1974) also found literacy was directly related (in a mathematical sense) to success in adult life.

This certainly implies that a measure of literacy need be developed according to necessary performances taken from the adult milieu involving such real-world areas as leases, insurance brochures, political materials and newspapers.

To be literate in America then means a person possesses the necessary reading skills to deal successfully with the written language encountered in daily life.

## Literacy Assessment

Because literacy is of such far-reaching importance, attempts have been made to assess the extent to which the American population is literate.

The U.S. Bureau of the Census attempts to assess the literacy of the United States population by tabulating the number of people fourteen years and older who have not completed six years of school. This constitutes the criterion for the Census Bureau's functional literacy data (Bormuth, 1978).

This criterion is not widely supported (Bormuth, 1969, 1971). Even graduation from high school does not appear a certain criterion. The fact is that number of years in school is a poor index of reading ability since it is common to observe great discrepancies in reading achievement among students at any one grade level (Bormuth, 1978).

In 1969 the National Assessment of Educational Progress began to gather information about the levels of educational achievement across the country and report its findings to the nation. The N.A.E.P. surveys the educational attainments of children, teens and adults in ten learning areas through criterion referenced tests. This is a continuous process and different learning areas are assessed every year, with all areas periodically reassessed in order to measure change in educational achievement (N.A.E.P., 1978). The findings of the N.A.E.P. indicate the percentage of persons tested who answer the test items correctly. These results then are indicative of what specific information a group of persons knows, but they do not demonstrate a grade level of proficiency in a subject area which can be generalized

for the American adult population.

In fact, a recent government report from the Comptroller General concerning changes and simplifications of income tax forms stated that "no data clearly showed how well tax-payers read."

A study done by the Educational Testing Service (ETS) in 1971 found that nearly one-third of the twelfth graders nationally surveyed read below the tenth grade level. This was based on a typical standardized reading test administered to high school students. This however, does not generate data for an average adult reading level.

In recognition of this lack of basic data, Norvell Northcutt (1975) stated,

> Although millions, perhaps billions of dollars have been spent on educational research, practically all of that money has been in support of studies designed to either develop educational programs or products or to compare the effectiveness or efficiency of competing programs or products. Unfortunately, questions of effectiveness and efficiency are irrelevent if the objective on which the program is based is not appropriate.
>
> Attempts to use the tools of behavioral and operations research to specify the transcendent objectives of educational systems have been practically nonexistent. Researchers are more adept at answering the question, "Which reading program is more effective?" than the more fundamental question, "Why is reading important?"

As an answer to the latter question, the Adult Performance Level project was undertaken. This singularly thorough study of functional literacy focused at the outset on identifying basic requirements for adult living and

isolating characteristics indicative of successful and unsuccessful adults. The study found that one out of five adults, 19.7 percent, lack the skills and knowledge needed to perform effectively, and another 33.9 percent are only marginally competent (Northcutt, 1975). The study points out that for an adult to function with an acceptable level of success he must be able to read, write, speak, listen, compute and solve problems. Since the sample data is nationally representative it is possible to estimate the proportions of the U.S. adult population which can be considered literate, marginal and illiterate (Northcutt, 1975).

## Toward Literacy for All

Literacy, as previously noted is a function of readability and reading ability. Clearly, then the authors and publishers of all types of publications written for the general adult public need to consider the reading skills of their consumers and adjust the readability level of the publications accordingly. Klare (1968) writes, "Ideally, a writer should have a rather detailed picture of his audience."

Materials will have little value if written in too complex or obscure a way for the reader to understand, and thereby, communication and consequently literacy, will not result.

With communication and literacy as final goals, movements in education and government have pushed toward

increasing adults' reading ability. Godway and Wilson (1976) remind us that, "No other medium can fully supplant the printed word as the major mode of transmitting information to the average American. Reading, therefore, must be the one skill taught in our schools most essential for our children if they are to participate even minimally in the work-a-day world." Programs such as adult basic education, survival literacy courses, and minimum competency standards for high school graduation work to enhance the decoding phase of communication. These are vital for as Bormuth (1978) points out, "Literacy is an undeniably great benefit, but only to the literate."

Recently the New Jersey legislature made a move toward adoption of a Plain Language Bill which would require materials of legal or business nature to be written at a level more consistent with the average adult's reading level. We wait with interest for the outcome of this proposal.

Even as progress is made in raising the reading achievement of the adult citizenry the American adult must continue to deal with many types of written communication. Newspapers, job contracts, leases, insurance policies and claim forms, warranties and a myriad of others need to be contended with. Many of these areas show an awareness that printed material needs to be evaluated in light of the consumer's ability, but questions arise as to the degree to

which readability adjustments are made to conform to the readership. How widespread are efforts in this area? How close have we come to matching readability and the person's ability to read? How able is the population to cope with everyday reading tasks?

## Hypothesis

To provide insight in this area, the readability of selected materials commonly used by adults was compared to the average adult reading level in the United States. It was hypothesized that the readability levels of the selected materials were higher than the average adult reading level.

## Assumptions and Limitations

It was assumed that the materials selected for the study are commonly used by adults. It was recognized that these are only a small sampling of reading materials which adults use.

The readability of the selected materials was determined by the Fry Readability Graph. It was assumed that this graph was used correctly and that it was a valid and reliable means for determining readability.

The average adult reading level was developed by Campbell (1979) from the data reported by the Adult Performance Level project. It is assumed that this average adult reading level is accurate for the current United States population and is defined as being approximately at the ninth grade level.

## The Fry Readability Graph

For this study the Fry Readability Graph was selected for use in identifying the grade level of difficulty of the selected adult materials.

The Fry Readability Graph was first introduced by Fry in 1961. Seven years later, he revised and Americanized the graph to designate grade levels rather than the original British word levels (Fry, 1977). The objective in formulating the graph was to produce a device by which educators, editors and the like, would be spared an overly time-consuming, often tedious job of computing readability using elaborate formulae. At the same time, the device would need to perform with accuracy.

The graph is similar to many other procedures used for determining readability levels in that it estimates the difficulty of vocabulary using word length expressed in number of syllables and the complexity of sentences using sentence length. Three randomly selected 100-word passages are used in the calculations.

Fry says of the graph, "The Readability Graph's contribution seems to be in simplicity of use without sacrificing much, if any accuracy, and its' wide and continuous range from grade one up through college (Fry, 1977).

Although readability formulae and procedures do not generally report direct measures of reliability and validity,

or use statistics like Standard Error of Measurement, we can assume that the Graph has at least a modest amount of reliability because it consistently correlates fairly well with other measures of readability. In fact, studies by Carver, Zingman, Dulin, Britton and Lumpkin, and Bormuth, found the graph correlated .85 with Carner's Rauding Technique, .81 with Bormuth, .95 with Flesch and .85 with Dall-Chall (Fry, 1977).

Fry also calls attention to the variability of writing by numerous authors at the same level and cautions that unreliability of any formula or procedure may be due to the formula itself or the variability of writing within the samples from the materials. The validity of the Fry Graph has been demonstrated in interformula correlations (Fry, 1977).

## Procedures

The materials for the study were selected to represent the broad base of reading materials which adults would commonly read as requisite to their roles in adult society.

The samples included in this study were from political campaign literature, a sample election ballot, and a newsletter from a congressman to his constituents; a lease, a homeowner's insurance policy, a government publication concerning truth-in-renting regulations, and the I.R.S. instruction book for individuals; a comprehensive do-it-yourself manual, two appliance use and care manuals, three newspapers,

three best-selling paperback novels and a driver's manual.

The readability of each sample was determined by randomly selecting three 100-word passages. These passages were analyzed to find the average number of syllables per hundred words and the average number of sentences per hundred words. These figures were located on the Fry Readability Graph and netted an index of readability for the sample.

The sampled materials were then ranked according to readability levels.

Using a graph the readability levels of the selected materials were compared to the average adult reading level.

A table was constructed to show the average number of syllables per hundred words and the average number of sentences per hundred words.

## Results

The data resulting from this study show a definite consideration of readership ability on the part of authors and publishers in the categories of leisure reading materials and the news media. However, the data also show that in the categories of political/legal and consumer/economics, the readability levels of the sampled materials far surpassed the average adult's reading ability.

Figure 1 illustrates the rank order of the readability levels for the twenty-one sampled items.

Figure 1. The Readability Levels of Selected Materials as Determined by the Fry Readability Graph

| Title | Readability Level |
|---|---|
| Amalfe, Carmody and Mirlocca campaign leaflet | 17+ |
| Lease | 15 |
| Election Ballot | 14 |
| Congressman Rinaldo's Newsletter | 14 |
| Truth-in-Renting Publication | 14 |
| Homeowner's Insurance Policy | 13 |
| The Daily Journal | 11 |
| The New York Times | 11 |
| Time | 11 |
| Dishwasher use and care manual | 11 |
| The Daily News | 10 |
| I.R.S. Instructions for Form 1040 | 10 |
| Reader's Digest | 9 |
| Complete Do-It-Yourself Manual | 9 |
| Sports Illustrated | 9 |
| Oven use and care manual | 8 |
| New Jersey Driver's Manual | 7 |
| The Women's Room | 7 |
| The Insiders | 7 |
| Ladies Home Journal | 7 |
| The Black Marble | 6 |

It is noted that informative materials relating to the exercise of one's political franchise, and the lease and protection of one's home and personal property had the highest readability levels of the sampled items and were written at levels four to eight years above the average adult's reading ability. These materials comprise 29 percent of the sample.

The next ranking 28 percent of the sample consisted mainly of news publications. The news magazine and the three newspapers had readability levels between tenth and eleventh grade thereby being within two years of the average adult's reading ability.

The nine items, or 43 percent remaining, were determined to be at the sixth through ninth grade levels and as such are compatible with the average reading ability of the adult population. Six of these items, three best-selling paperback books and three popular magazines, may be categorized as leisure reading materials. The other items which were within this range were a driver's manual, an appliance use and care manual, and a do-it-yourself home maintenance manual.

Figure 2 visually illustrates the comparison between the readability levels of the selected materials and the average adult reading ability.

**Figure 2.** A Comparison of the Readability Levels of Selected Materials and the Average Adult Reading Ability

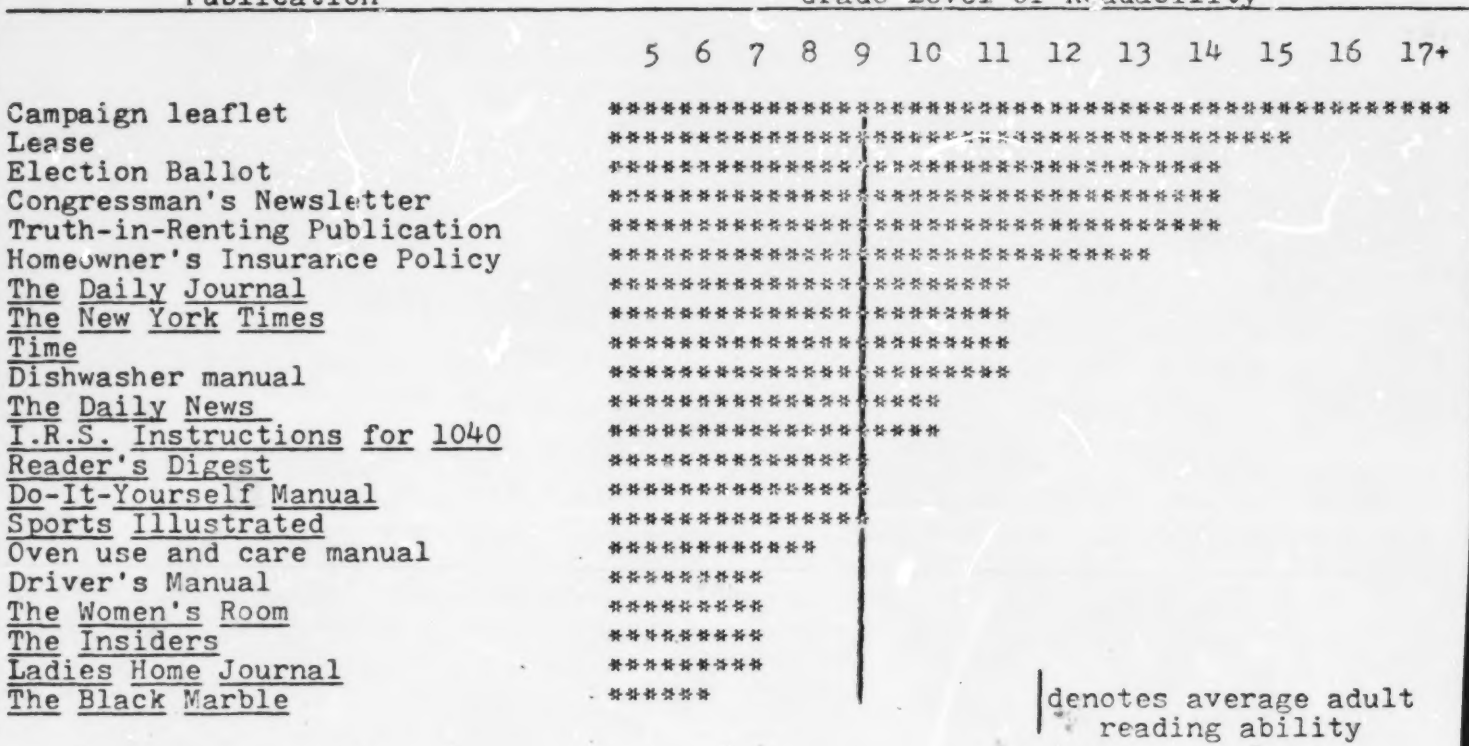

Figure 3 shows the difference in average number of syllables and sentences per hundred words in the sampled passages.

Figure 3. Average Number of Sentences per Hundred Words and Average Number of Syllables per Hundred Words of Sampled Passages

| | Syllables per 100 wds. | Sentences per 100 wds. |
|---|---|---|
| Campaign leaflet | 179.6 | 4.3 |
| Lease | 168 | 1.4 |
| Election Ballot | 164.6 | 3.2 |
| Congressman's Newsletter | 169.3 | 5.0 |
| Truth-in-Renting Publication | 169 | 4.1 |
| Homeowner's Insurance Policy | 157 | 1.1 |
| The Daily Journal | 162 | 5.2 |
| The New York Times | 154 | 3.9 |
| Time | 162 | 5.2 |
| Dishwasher manual | 162.3 | 6.9 |
| The Daily News | 151 | 4.1 |
| I.R.S. Instructions for Form 1040 | 154.3 | 5.4 |
| Reader's Digest | 153.6 | 6.9 |
| Complete Do-It-Yourself Manual | 151 | 5.4 |
| Sports Illustrated | 149 | 5.8 |
| Oven manual | 144 | 6.3 |
| N.J. Driver's Manual | 141 | 8.2 |
| The Women's Room | 139 | 5.8 |
| The Insiders | 142 | 7.0 |
| Ladies Home Journal | 138.6 | 6.4 |
| The Black Marble | 138.6 | 8.8 |

The average number of sentences ranged from 1.1 to 8.8 per hundred words. The materials having the fewest, and therefore the most complex, sentences per sample were the lease (1.4 per hundred words) and the insurance policy (1.1 per hundred words).

The average number of syllables varied from 138.6 to 179.6 per hundred words. The materials having the highest syllable count per sample were the political/legal and the consumer/economics areas. These materials then can be construed to present the most difficult vocabulary of the materials sampled.

## Conclusions

It was the purpose of this study to investigate the degree to which readability levels of materials commonly used by adults reflect an awareness of and adjustment to the reading ability of the average adult in an effort to guarantee communication between parties and foster literacy in the United States.

The study has shown clearly that only certain types of materials were written with the readership in mind. Although the sample used was small in comparison to the great variety of reading materials which adults are faced with daily, it demonstrated that in the political/legal and consumer/economics areas there is a great need to revise and rewrite materials so that the information therein may be more readily understood by the adult population.

Notable progress has been made in recognizing the difficulties many adults face when confronted with materials written above their reading ability. As a result legislation has been considered to reduce "legalese" and present laws at a level more easily read by the general public. Also, the Internal Revenue Service has succeeded in reducing the income tax instruction's readability level without sacrificing the legal precision required in the explanation of tax law.

Educational facilities must continue to strive toward eliminating illiteracy through improvement of reading skills;

at the same time, materials, whether governmental or private publications, which contribute to the successful functioning in the adult world should be written with their readership's needs and abilities in mind. In this way we will move toward the shared goals--effective communication and literacy.

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